

free ends. Lower jaw intermediate in form to that of *Rhinoceros* and *Tapirus*. Formula of dentition as in the latter, viz.,

$$\begin{array}{cccc} 3-3 & 1-1 & 4-4 & 3-3 \\ \text{in.} & \text{c.} & \text{p. m.} & \text{t. m.} \\ 3-3 & 1-1 & 4-4 & 3-3 \end{array} = 44.$$

The incisors and canines are arranged in semicircles as in *Tapirus*, differ little in size, and have simple conical crowns. The premolars and molars resemble those of *Acrotherium incisivum*.

HYRACODON NEBRASCENSIS, Leidy.

*Rhinoceros nebrascensis*, Leidy. Pr. A. N. S. v, 121; vii, 157; Owen's Rep. Geol. Surv., Wisc. 556; Anc. Faun. Nebr. 86.

*Aceratherium nebrascense*, Leidy. Pr. A. N. S. v, 331.

A unique species, possessing a greater number of teeth than any other known member of the *Rhinoceros* family. It was about the size of the common hog.

*Locality.* Mauvaises Terres of Nebraska.

3. TITANOTHERIUM, Leidy.

Formula of dentition as follows:

$$\begin{array}{cccc} 2-2 & 1-1 & 4-4 & 3-3 \\ \text{in.} & \text{c.} & \text{p. m.} & \text{t. m.} \\ ?-? & 1-1 & 4-4 & 3-3 \end{array} =$$

The molars are separated from the canines by wide intervals. The latter teeth have short, robust, conoidal crowns. Outer lobes of the premolars like those of *Rhinoceros*, the inner ones isolated from the former and connate. Outer lobes of the true molars like those of *Palæotherium*; the inner ones three in number, of which the intermediate one is conical and is the largest, and the others are trihedral, as in *Chalicotherium*.

TITANOTHERIUM PROUTHI, Leidy. Anc. Faun. Nebr. 72; Pr. A. N. S. vii, 157.

*Palæotherium*, Cuv. Prout. Am. Jour. Sci. Arts iii, 248.

*Palæotherium? Proutii*, Owen, Norwood, and Evans. Pr. A. N. S. v, 66; Leidy, Ibidem 122; Owen's Rep. Geol. Surv. Wisc. 551.

*Rhinoceros? americanus*, Leidy. Pr. A. N. S. vi, 2.

*Eotherium americanum*, Leidy. Pr. A. N. S. vi, 392.

*Palæotherium giganteum*, Leidy. Anc. Faun. Nebr. 78.

A unique species, and one of the largest of pachyderms. Length of the upper dental series in a straight line 17 inches; transverse diameter of second true molar  $3\frac{1}{2}$  inches, antero-posterior diameter the same.

*Locality.* Mauvaises Terres of Nebraska.

#### Description of Twenty-five New Species of Exotic UNIONES.

By ISAAC LEA.

UNIO HAINESIANUS. Testâ alâtâ, lævi, subrotundatâ, subinflâtâ, valdè inæquilaterali, valvulis crassis; natibus prominentibus, angulatis; epidermide luteofuscâ; dentibus cardinalibus crassis, crenulatis elevatisque; lateralibus longis, crassis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

UNIO MYERSIANUS. Testâ bialatâ, lævi, triangulari, subcompressâ, inæquilaterali, posticè angulatâ; valvulis crassis; natibus prominulis epidermide tenebroso-fuscâ; dentibus cardinalibus longis crenulatisque; lateralibus prælongis, lamellatis subcurvisque; margaritâ colore salmonis tinctâ.

*Hab.* Siam. S. R. House, M. D.

UNIO HOUSEI. Testâ bialatâ, lævi, triangulari, compressâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis subcrassis; natibus prominulis; epidermide fuscâ; dentibus cardinalibus lamellatis; lateralibus prælongis, lamellatis subcurvisque; margaritâ colore salmonis tinctâ.

*Hab.* Siam. S. R. House, M. D.

**UNIO GRAVIDUS.** Testâ alatâ, lævi, triangulari, valdè inflatâ, valdè inæquilaterali; valvulis tenuibus; natibus elevatis, tumidis; epidermide luteâ, nitidâ; dentibus cardinalibus prælongis, valdè lamellatis; lateralibus longis, lamellatis subcurvisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO INORNATUS.** Testâ lævi, ellipticâ, inflatâ, subæquilaterali, posticè subangulatâ; valvulis subpellucidis tenuibusque; natibus subprominentibus; epidermide olivaceâ, substriatâ; dentibus cardinalibus longis lamellatisque lateralibus longis rectis, lamellatisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO LUTENS.** Testâ lævi, ellipticâ, inflatâ, subæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus subprominentibus; epidermide luteâ, politâ; dentibus cardinalibus crassis brevisque; lateralibus brevis, subcrassis subrectisque; margaritâ albâ et iridescente.

*Hab.* Newville Burmah. Mrs. Vinton.

**UNIO EXIMIUS.** Testâ alatâ, plicatâ, obovatâ, compressâ, valdè inæquilaterali, posticè rotundatâ; valvulis tenuissimis; natibus præminulis; epidermide virido-luteâ, obsolete radiatâ; dentibus cardinalibus lamellatis tenuisque; lateralibus longis, lamellatis subcurvisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO TUMIDULUS.** Testâ lævi, obliquâ, inflatâ, posticè angulatâ, valdè inæquilaterali; valvulis subcrassis; natibus præminulis; epidermide tenebroso-olivaceâ, striatâ; dentibus cardinalibus longis lamellatisque; lateralibus prælongis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO RUSTICUS.** Testâ tuberculatâ, ellipticâ, inflatâ, inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus subprominentibus; epidermide olivaceâ, substriatâ; dentibus cardinalibus longis lamellatisque; lateralibus longis, lamellatis subrectisque; margaritâ albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO SAGITTARIUS.** Testâ lævi, valdè transversâ, valdè inæquilaterali, subinflatâ, subcylindraceâ, posticè acuto-angulatâ; valvulis subtenuibus; natibus vix præminulis; epidermide virido-olivaceâ, striatâ; dentibus cardinalibus longis, rectis lamellatisque; lateralibus prælongis subrectisque; margaritâ albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO SUBSTRIATUS.** Testâ lævi, ellipticâ, subinflatâ, subæquilaterali; posticè angulatâ, anticè rotundatâ; valvulis crassiusculis; natibus subprominentibus granulatisque; epidermide olivaceâ eradiatâ et rugoso-striatâ; dentibus cardinalibus longis, rectis lamellatisque; lateralibus longis, rectis lamellatisque; margaritâ argenteâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO SCOBINATUS.** Testâ plicatâ, transversâ, in medio compressâ, valdè inæquilaterali, posticè angulatâ, ad basim emarginatâ; valvulis subcrassis; natibus parvis, præminulis, ad apicem undulatis; epidermide viridi et luteâ, minutè striatâ; dentibus cardinalibus obliquis, compressis; lateralibus prælongis, in uterque valvis duplicis subrectisque; margaritâ albâ et iridescente.

*Hab.* Siam. T. R. Ingalls, M. D., S. R. House, M. D.

**UNIO HUMILIS.** Testâ plicatâ, transversâ, subinflatâ, subæquilaterali, subcylindraceâ, posticè biangulatâ; valvulis tenuibus, pellucidis; natibus præminulis, pæplicatis; epidermide virido-luteâ, striatâ; dentibus cardinalibus lamellatis rectisque; lateralibus longis lamellatisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO PHASELUS.** Testâ plicatâ, transversâ, inflatâ, subemarginatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus parvis, prominulis, ad apicem undulatis; epidermide viridi et luteâ, politâ; dentibus cardinalibus brevis subcrassisque; lateralibus praelongis, duplicis in uterque valvis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO VERREAUIANUS.** Testâ sulcatâ, oblongâ, inflatâ, subemarginatâ, subæquilaterali, posticè obtusè angulatâ; valvulis crassis; natibus parvis, subprominentibus undulatisque; epidermidè luteo-bruneâ, striatâ dentibus cardinalibus magnis, obliquis, compressis crenulatisque; lateralibus longis, rectis lamellatisque; margaritâ salmonis colore tinctâ et iridescente.

*Hab.* Cape of Good Hope. Mr. E. Verreau.

**UNIO AFRICANUS.** Testâ lævi, ellipticâ, subcompressâ, subemarginatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus parvis, prominulis undulatisque; epidermidè luteo-olivaceâ et politâ; dentibus cardinalibus parvis, obliquis, compressis sublamellatisque; lateralibus praelongis subrectisque; margaritâ salmonis colore tinctâ et valdè iridescente.

*Hab.* Cape of Good Hope. Mr. E. Verreau.

**UNIO SHURTLIFFIANUS.** Testâ minutè plicatâ, ellipticâ, inæquilaterali, subcylindraceâ, posticè obtusè angulatâ, anticè rotundatâ, ad latus subplanulatâ; valvulis subcrassis; natibus prominulis, ad apices minutè undulatis; epidermidè virido-luteâ; dentibus cardinalibus sublongis, compressis geminisque; lateralibus longis subrectisque; margaritâ salmonis colore tinctâ et iridescente.

*Hab.* Sina River, India, Major Le Conte. Ahmednugger, India. S. Shurtleff, M. D.

**UNIO EFFULGENS.** Testâ sulcatâ, ellipticâ, subinflatâ, inæquilaterali, posticè obtusè angulatâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, politâ; dentibus cardinalibus parvis crenulatisque; lateralibus longis curvisque; margaritâ cæruleo-albâ.

*Hab.* Brazil. B. W. Budd, M. D.

**UNIO DUNKERIANUS.** Testâ plicatâ, transversâ, subinflatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominulis, costis divaricatis; epidermide tenebroso-fuscâ politâque; dentibus cardinalibus longis compressisque; lateralibus praelongis, lamellatis rectisque; margaritâ cæruleo-albâ et valdè iridescente.

*Hab.* River Macacoú, Rio de Janeiro, Brazil, Prof. Dünker. New Grenada, Mr. E. Verreau.

**UNIO SHUTTLEWORTHII.** Testâ sulcatâ, oblongâ, transversâ, valdè inæquilaterali, subcompressâ, posticè obtusè biangulatâ, ad latus planulatâ; valvulis subcrassis; natibus prominulis; epidermide bruneo-nigricante; dentibus cardinalibus parvis; lateralibus longis subcurvisque; margaritâ purpureâ et iridescente.

*Hab.* Australia. R. J. Shuttleworth, Esq. Berne, Switzerland.

**UNIO NUCLEUS.** Testâ plicatâ, quadratâ, inflatâ, subæquilaterali, posticè angulatâ; valvulis crassis; natibus prominentibus, perplicatis; epidermide virido-fuscâ, minutissimè perstriatâ; dentibus cardinalibus crassis brevisque; lateralibus crassis, brevis, duplicis in uterque valvis subcurvisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* Siam. S. R. House, M. D.

**UNIO WHEATLEYANUS.** Testâ lævi, ellipticâ, inflatâ, inæquilaterali; valvulis crassis; natibus prominulis, costis elevatis, epidermide tenebroso-olivâ, rugoso-striatâ; dentibus cardinalibus magnis, crassiusculis, subdivisis; lateralibus longis crassisque; margaritâ vel albâ vel carneâ et iridescente.

*Hab.* Rio Plata, M. A. D'Orbigny. Rio Negro. C. M. Wheatley, Esq.

UNIO BROWNII. Testâ lævi, obovatâ, valdè compressâ, valde inæquilaterali; valvulis subcrassis; natibus prominulis, costis divaricatis; epidermide tenebroso-viridi, striatâ; dentibus cardinalibus submagnis, in utraque valvis duplicis; lateralibus lamellatis, sublongis curvisque; margaritâ albâ.

*Hab.* Mocha? Asia. Capt. George Brown.

UNIO SUAVIDICUS. Testâ lævi, oblongâ, subcompressâ, valdè inæquilaterali, anticè rotundatâ, posticè truncatâ, natibus subprominentibus, costis elevatis; epidermide luteo-olivâ, minutè striatâ; dentibus cardinalibus parvis, compressis, crenulatis, in utraque valvis duplicis, lateralibus longis, lamellatis subrectisque; margaritâ cæruleo-albâ et iridescente.

*Hab.* River Amazon. Mr. E. Verreau, Paris.

UNIO UMBROSUS. Testâ lævi, ellipticâ, subinflatâ, inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide castaneâ, politâ, transversè fasciatâ; dentibus cardinalibus magnis, subelevatis; lateralibus longis, lamellatis sub-curvisque; margaritâ vel purpureâ vel roseâ et iridescente.

*Hab.* Medellin River, Mexico. M. Burrough, M. D.

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*Description of a new Snake from Illinois.*

By ROBERT KENNICOTT. •

REGINA KIRTLANDII.

The body of this species is somewhat trigonal in cross sections, (flattened on the abdomen,) and tapers gently from the middle to either extremity. There is no distinction of neck, and the very small head calls to mind that of the *Coluber amoenus* of Say. It is, however, much larger, and the scales are very strongly carinated. The carinæ are found on all the longitudinal rows of scales, of which there are nineteen exclusive of the belly scales; the external row is almost as sharply keeled as those on the back, even to the tip of the tail. The dorsal scales are narrow and elongated, the sides nearly parallel except near the ends.

As already stated, the head is very small. The vertical plate is sub-hexagonal, the two anterior sides forming a very obtuse angle; the external edges are slightly convergent posteriorly. The nostrils in the middle of the two plates. There is one ante-orbital and two post-orbitals; there are six labials above and seven below, in addition to the rostrals.

The ground color of this snake is a light purplish brown, with four rows of large nearly circular blotches covering the whole back and sides. They are arranged so as to alternate; the outer blotches on the outer row are a little larger than those on the two central ones, and are of the width of four or five scales. The belly is of a pale brick red, (fading to brownish yellow in alcohol,) with a well defined blotch of black near the exterior of each scale. These give rise to a series of very well defined round black spots on either side of the abdomen; and there is also an obscure series of dark blotches on the anterior edge of the scales in the exterior dorsal row. The dots in this series are separated by intervals of two unmarked scales. The spots of this row alternate with those of the larger series immediately above.

On separating the scales, the skin is seen to be colored like the adjacent scales. It is black in the dark blotches and very light in the intermediate space, giving rise to the appearance of whitish edges to the scales.

There are thus four series of large spots on the back and sides, two on the belly, and two in the exterior dorsal rows, making eight in all. The last mentioned row is sometimes very obscure, the others are always distinct.

I refer this serpent to the genus *Regina* of B. and G., although it is different in some respects from the other known species. It is somewhat like the *R. rigida*, but is differently marked; the latter having the two abdominal rows close together on the middle of the belly, instead of being separated. Neither is there